

2012 California Survey of Residential Lawn and Garden Equipment Owners: Population and Activity

**California Air Resources Board
Air Quality Planning and Sciences Division
Gasoline Off-Road Inventory Section**

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Section 1: Lawn and Garden Survey Overview

To reduce ambient ozone levels, there is a need to control ozone pre-cursors including reactive organic gases (ROG) and oxides of nitrogen (NOx). Lawn and Garden equipment are thought to be a significant contributor to ROG emissions inventories, especially in the South Coast Air Basin. The lawn and garden equipment emissions inventory includes lawn mowers (walk behind and riding), string trimmers, leaf blowers, chain saws, lawn edgers, lawn and garden tractors, tillers, wood splitters, brushcutters/hedgecutters, shredders, snow blowers, and stump grinders/chippers. Because registration and reporting requirements do not apply to lawn and garden equipment, surveys must be used to provide equipment population and activity estimates necessary for inventory development.

Lawn and Garden equipment have historically been categorized into two sectors: residential and commercial. The residential survey covers home owners that own and use lawn and garden equipment. The commercial survey covers institutions such as golf courses or cemeteries that maintain their own property and/or hire landscape contractors. Surveys were last conducted in 2001 on residential use of lawn and garden equipment, and in 2006 for commercial use. This survey covers residential use of lawn and garden equipment, and updates information from the 2001 survey. Over the last decade a relatively newer trend has been identified where more homeowners are contracting for lawn and garden services. While this survey does identify the fraction of homeowners that contract for services, it does not contain information about the lawn and garden equipment used by those contractors. That type of use will be the focus of a future survey.

A total of 2,999 surveys were completed over a two-month period by the Institute of Social Research of California State University Sacramento (ISR) in 2012. **Section 2** describes development of the sample frame and the methods for conducting the survey. **Section 3** demonstrates the survey responses were unbiased with regard to population by county. **Section 4** provides summarized survey responses. **Section 5** presents the survey questionnaire.

Section 2: Sample Frame Development and Methods

In order to administer the survey, a sample frame must be developed. In this case, a sample of households was developed, designed to be randomly selected and representative broadly of the entire State of California. This sample was developed using a Random-Digit Dialing (RDD) telephone sample. To create the RDD sample, ISR subcontracted with Scientific Telephone Samples, Inc. (STS). The sample from STS contained randomly-generated telephone numbers that covered all of California's area codes and exchanges, stratified by zip code. This means that the sampled phone numbers would be proportional to the population in each zip code, and ultimately representative of the entire State and all 58 counties.

Once the selection was complete, ISR and ARB staff developed the survey. Questions were designed to provide information about the population, activity, and use patterns of different types of lawn and garden equipment, and were also designed for consistency with the previous survey conducted in 2001. The complete survey is presented in Appendix A. ISR staff then administered the survey using a Computer-Assisted Telephone Interview (CATI) system. This telephone survey technique provided a structured computerized process to assist the interviewer in administering the questions in a consistent, efficient and timely manner.

Section 3: Interview Summary

ISR conducted the survey between March and June of 2012. A total of 38,424 telephone numbers were extracted from Scientific Telephone Samples and defined the sample frame of this project. After administering the survey, a total of 2,999 surveys were completed. This represents a roughly 8% response rate. Surveys were not completed for the remaining 92% of selected telephone numbers, as shown in the Table below.

Table 1. Sample Frame Summary

Survey Respondents	Count	Percent
Complete Surveys	2,999	7.8
Non-Completes*	31,302	81.5
Refusals	3,755	9.8
Mid Terminations	368	1.0
Total Calls:	38,424	100.0
* non-completes include no answer, busies, answer machines, and/or faxes		

Table 2 compares the geographic location of completed household surveys to the population distribution by County as measured by 2012 population estimates by the California Department of Finance. Results show the survey is representative of the State overall.

Table 2. Response Rate Sample Distribution by County

2012 Residential L&G Survey			2012 DOF County Population	
County	Respondents	Distribution Percent	Population	Distribution Percent
Alameda	98	3.27	1,530,176	4.06
Alpine	0	0.00	1,088	0.00
Amador	6	0.20	37,123	0.10
Butte	31	1.03	220,263	0.58
Calaveras	11	0.37	45,216	0.12
Colusa	2	0.07	21,598	0.06
Contra Costa	88	2.93	1,066,602	2.83
Del Norte	0	0.00	28,527	0.08
El Dorado	21	0.70	181,711	0.48
Fresno	84	2.80	943,493	2.50
Glenn	3	0.10	28,226	0.07
Humboldt	26	0.87	134,728	0.36
Imperial	16	0.53	179,138	0.48
Inyo	0	0.00	18,547	0.05
Kern	89	2.97	849,977	2.26
Kings	15	0.50	151,774	0.40
Lake	12	0.40	64,412	0.17
Lassen	3	0.10	34,040	0.09
Los Angeles	663	22.11	9,889,520	26.25
Madera	16	0.53	152,325	0.40
Marin	20	0.67	253,374	0.67
Mariposa	2	0.07	17,952	0.05
Mendocino	15	0.50	87,965	0.23
Merced	27	0.90	260,029	0.69
Modoc	2	0.07	9,550	0.03
Mono	1	0.03	14,414	0.04
Monterey	28	0.93	419,586	1.11
Napa	14	0.47	137,731	0.37
Nevada	14	0.47	97,366	0.26
Orange	191	6.37	3,057,879	8.12
Placer	37	1.23	355,455	0.94
Plumas	2	0.07	19,698	0.05
Riverside	163	5.44	2,234,193	5.93
Sacramento	159	5.30	1,433,525	3.81
San Benito	5	0.17	56,137	0.15
San Bernardino	135	4.50	2,059,699	5.47
San Diego	261	8.70	3,128,734	8.31
San Francisco	48	1.60	816,311	2.17
San Joaquin	80	2.67	692,997	1.84
San Luis Obispo	36	1.20	271,502	0.72
San Mateo	50	1.67	727,795	1.93
Santa Barbara	42	1.40	426,351	1.13
Santa Clara	131	4.37	1,813,696	4.81
Santa Cruz	26	0.87	265,350	0.70
Shasta	19	0.63	178,107	0.47
Sierra	0	0.00	3,178	0.01
Siskiyou	8	0.27	44,808	0.12
Solano	36	1.20	415,787	1.10
Sonoma	42	1.40	487,672	1.29
Stanislaus	62	2.07	519,339	1.38
Sutter	8	0.27	95,119	0.25
Tehama	12	0.40	63,430	0.17
Trinity	0	0.00	13,471	0.04
Tulare	41	1.37	451,540	1.20
Tuolumne	7	0.23	54,524	0.14
Ventura	54	1.80	829,065	2.20
Yolo	29	0.97	204,349	0.54
Yuba	8	0.27	72,642	0.19
Totals:	2,999	100	37,668,804	100

Section 4: 2012 Residential Lawn and Garden Survey Responses

Below are the survey questions and responses. Where questions were similar or identical we have compared results from the 2012 survey to results from the 2001 survey. Based on respondent answers to certain questions (as shown in Appendix A), the surveyor did not continue to follow up on several subsequent inquiries. For example, respondents that answered with ***“A lawn service does all the yard work”*** on Table 5 were not further asked whether or not they may still own/ use lawn and garden equipment, own/use gas cans, and/or ask if they would make any future equipment purchases. As a result, the percentages of the table results are based on respondents who answered the questions.

At the beginning of each survey, the respondents were asked if they owned/operated a lawn care service (a company that’s hired to maintain your landscape’s needs). 99.7% of residential didn’t own/operate a lawn care service as shown in Table 3.

Table 3: Do you operate a lawn service? (Q40)

Response	Count	Percent
No	2,990	99.70
Don't know	8	0.27
Refused	1	0.03

The vast majority of survey respondents (69.9%) owned a house (Table 4) which is similar to the survey done in 2001.

Table 4: What best describes the property at which you currently live in? (Q60)

Household Type	2012		2001	
	Count	Percent	Count	Percent
House	2,097	69.9	1,537	70.9
Apartment	598	19.9	167	7.7
Condo	144	4.8	81	3.7
Townhouse	66	2.2	49	2.3
Other	88	2.9	116	5.3
Don't know/Unspecified	3	0.1	216	10.0
Refused	3	0.1	0	0.0

About 44% of household respondents outsourced their lawn care needs, whereas 38% maintained their own yard (Table 5).

Table 5: Who usually maintains these lawn, shrub, tree, or garden areas? (Q70)

Who takes care of your lawn area?	2012		2001	
	Count	Percent	Count	Percent
A lawn service does all of the yard work	1,342	44.7	603	27.8
I/others in the household do all of the yard work	1,153	38.4	1,107	51.0
I don't have any of these areas on my property/I don't have a yard	414	13.8	0	0.0
I/others in the household do some of the yard work and a lawn service does the rest	72	2.4	135	6.2
Don't know	18	0.6	324	14.9

About a two third of the respondents own and use their lawn and garden equipment to maintain their yard with only a handful not using their equipment in over a year, as shown in Table 6. That table also shows the fraction of households owning and using lawn and garden equipment is higher in 2012 than in 2001, suggesting that more households are contracting out lawn and garden services.

Table 6: Do you own and/or use any powered lawn and garden equipment at your residence? (Q80)

Do you own/use any lawn and garden equipment?	2012		2001	
	Count	Percent	Count	Percent
Yes, I own and use equipment	1,098	66.3	1,124	52.0
Yes, I own equipment but have not used it in over a year	35	2.1	0	0.0
No	523	31.6	1,039	48.0
Refused	1	0.1	0	0.0

Walk behind lawn mowers are the most common type of equipment owned by participants in the survey (999 owners), followed by string trimmers (364 owners), leaf blowers (306 owners), and lawn edgers (165 owners), respectively (Table 7).

Table 7: What type of lawn and garden equipment do you have? (Q90)

Equipment Type	2012		2001	
	Count	Percent	Count	Percent
Brushcutter/Hedgecutter	86	3.9	142	3.9
Chain Saw	139	6.2	583	16.1
Lawn & Garden Tractor	13	0.6	50	1.4
Lawn Edger	165	7.4	331	9.1
Leaf Blower	306	13.7	545	15.0
Riding Lawn Mower	52	2.3	91	2.5
Shredder/Chipper	13	0.6	3	0.1
Snow Blower	4	0.2	12	0.3
String Trimmers	364	16.3	814	22.4
Stump Grinder	1	0.0	3	0.1
Tiller	41	1.8	9	0.2
Walk Behind Lawn Mower	999	44.9	905	24.9
Wood Splitter	16	0.7	36	1.0
Not Listed	28	1.3	105	2.9

Overall, gas powered lawn and garden equipment is more prevalent than electric and diesel equipment combined. However, with brushcutters/hedgecutters and leaf blowers, electric powered equipment was more popular than its gas-powered sibling (Table 8).

Table 8: What are the lawn and garden power types? (Q100)

Equipment Type	2012						2001					
	Gas	Electric	Diesel	Gas %	Electric %	Diesel %	Gas	Electric	Diesel	Gas %	Electric %	Diesel %
Brushcutter/Hedgecutter	22	58	1	0.7	1.9	0.0	36	105	1	1.7	4.8	0.0
Chain Saw	90	47	0	3.0	1.6	0.0	392	187	4	18.1	8.6	0.2
Lawn & Garden Tractor	9	1	2	0.3	0.0	0.1	41	1	8	1.9	0.0	0.4
Lawn Edger	85	65	0	2.8	2.2	0.0	183	147	1	8.4	6.8	0.0
Leaf Blower	143	161	0	4.8	5.4	0.0	172	372	1	7.9	17.2	0.0
Riding Lawn Mower	52	0	0	1.7	0.0	0.0	87	2	2	4.0	0.1	0.1
Shredder/Chipper	7	5	0	0.2	0.2	0.0	2	1	0	0.1	0.0	0.0
Snow Blower	3	1	0	0.1	0.0	0.0	12	0	0	0.6	0.0	0.0
String Trimmers	208	151	0	6.9	5.0	0.0	349	463	2	16.1	21.3	0.1
Stump Grinder	1	0	0	0.0	0.0	0.0	2	1	0	0.1	0.0	0.0
Tiller	38	1	1	1.3	0.0	0.0	8	1	0	0.4	0.0	0.0
Walk Behind Lawn Mower	864	108	2	28.8	3.6	0.1	771	133	1	35.6	6.1	0.0
Wood Splitter	9	7	0	0.3	0.2	0.0	36	0	0	1.7	0.0	0.0
Not Listed	7	3	1	0.2	0.1	0.0	66	37	2	3.0	1.7	0.1

The activity of lawn and garden equipment are grouped by minutes of usage. The majority of lawn and garden equipment falls under 30 minutes in each usage (Table 9).

Table 9: How long do you use this piece of equipment each time (grouped by minutes)? (Q110)

Equipment Type	Grouped by Minutes						
	0-5	6-10	11-15	16-30	31-45	46-60	61+
Brushcutter/Hedgecutter	4	12	8	29	6	15	8
Chain Saw	11	10	19	37	2	18	30
Lawn & Garden Tractor	0	0	0	3	1	4	2
Lawn Edger	19	31	29	56	8	9	2
Leaf Blower	25	58	71	102	10	21	9
Riding Lawn Mower	4	0	1	7	6	19	14
Shredder/Chipper	1	0	0	3	0	4	3
Snow Blower	0	0	0	1	0	1	1
String Trimmers	24	53	63	131	11	37	31
Stump Grinder	0	0	0	0	0	1	0
Tiller	5	1	0	8	3	15	8
Walk Behind Lawn Mower	28	72	117	453	110	137	38
Wood Splitter	1	0	1	4	1	1	7
Not Listed	2	1	2	6	0	4	0

Monthly segments are divided by seasons. Fall is defined as September, October, and November. Winter is defined as December, January, and February. Spring is defined as March, April, and May. Summer is defined as June, July, and August. Usage of each lawn and garden equipment is different for each season. For example, leaf blowers frequency usage (2.86 times during the months of June, July, and August) is more often in the fall (2.64) and spring (2.40) seasons, with the least frequency usage in the winter (1.49) (Table 10).

Table 10: How often do you use this type of equipment (frequency per month)? (Q120)

Equipment Type	Fall	Summer	Winter	Spring	Fall %	Summer %	Winter %	Spring %
Brushcutter/Hedgecutter	1.61	1.21	0.74	1.55	31.5	23.6	14.6	30.3
Chain Saw	1.02	1.25	0.88	0.86	25.4	31.3	22.0	21.4
Lawn & Garden Tractor	2.70	1.20	0.30	1.80	45.0	20.0	5.0	30.0
Lawn Edger	2.56	1.71	0.89	2.31	34.3	23.0	11.9	30.9
Leaf Blower	2.64	2.86	1.49	2.40	28.1	30.4	15.8	25.6
Riding Lawn Mower	3.76	2.45	1.24	2.75	36.9	24.0	12.1	26.9
Shredder/Chipper	0.91	0.91	0.82	0.91	25.6	25.6	23.1	25.6
Snow Blower	8.00	1.00	9.00	1.00	42.1	5.3	47.4	5.3
String Trimmers	2.65	1.68	0.79	2.19	36.3	23.0	10.8	29.9
Stump Grinder	1.00	0.00	0.00	0.00	100.0	0.0	0.0	0.0
Tiller	0.83	0.78	0.39	1.15	26.4	24.8	12.4	36.4
Walk Behind Lawn Mower	3.14	2.06	1.15	2.49	35.5	23.3	13.1	28.2
Wood Splitter	2.00	1.13	1.43	1.00	36.0	20.4	25.7	18.0
Not Listed	2.00	1.67	1.22	1.50	31.3	26.1	19.1	23.5

Most lawn and garden equipment are less than 6 years old. From the survey results, walk behind lawn mowers have the longest lasting longevity of all the other equipment pieces (Table 11).

Table 11: What is the approximate age of this equipment? (Q130)

Equipment Type	Age Distribution (Grouped by Month)				
	0-24	25-48	49-72	73-108	109+
Brushcutter/Hedgecutter	18	20	14	6	25
Chain Saw	31	21	26	18	35
Lawn & Garden Tractor	1	1	2	1	7
Lawn Edger	42	35	28	12	35
Leaf Blower	116	60	50	27	42
Riding Lawn Mower	10	11	11	6	14
Shredder/Chipper	1	2	3	5	2
Snow Blower	3	0	1	0	0
String Trimmers	120	91	59	21	50
Stump Grinder	1	0	0	0	0
Tiller	5	6	5	4	19
Walk Behind Lawn Mower	222	186	179	76	194
Wood Splitter	5	0	3	1	6
Not Listed	5	3	1	0	4

Regarding the frequency of lawn service, 54.1% of the respondents that use a lawn service have their service work four times a month, while 18.4% of the respondents had their lawn serviced twice per month (Table 12).

Table 12: How often does your lawn service come? (Q210)

Gardener Frequency (per month)	Count	Percent
1	74	5.2
2	263	18.4
3	77	5.4
4	774	54.1
5	18	1.3
6	8	0.6
7	1	0.1
8	14	1.0
9+	17	1.2
Don't Know	146	10.2
Refused	40	2.8

Regarding the lawn service time by private gardeners, 10.9% of respondents estimate the service time is between 16 to 30 minutes while 9.9% of the respondents estimate the service time is between 46 to 60 minutes (Table 13).

Table 13: How long does it take the private gardeners to complete services each time? (Q220)

Gardener Service Time (in minutes)	Count	Percent
1-15 minutes	89	3.0
16-30 minutes	326	10.9
31-45 minutes	130	4.3
46-60 minutes	297	9.9
61-120 minutes	185	6.2
121-180 minutes	54	1.8
181 minutes and above	81	2.7
Don't Know	1837	61.3

The majority of lawn and garden equipment owners own one gas can to refuel their gasoline powered tools (Table 14).

Table 14: How many gas cans do you own and use to refuel your lawn and garden equipment? (Q140)

How many gas cans do you own/use?	Count	Percent
1	637	58.1
2	141	12.9
3	29	2.6
4 or more	28	2.6
No gas cans	261	23.8

Plastic is the most purchased material used in gas cans (Table 15).

Table 15: What type of material is this gas can made of? (Q160)

Gas Can Construction	Count	Percent
Metal	129	11.29
Plastic	998	87.31
Other	1	0.09
Don't Know	15	1.31

Gasoline cans vary substantially in size (Table 16).

Table 16: About what size is this gas can? (Q150)

Capacity Size (in gallons)	Count	Percent
0-1.1	289	20.6
1.2-2.4	278	19.8
2.5-3.4	141	10.0
3.5-4	20	1.4
5-6	314	22.3
7-10	13	0.9
11 or more	4	0.3
Don't Know	56	4.0
Refused	30	2.1
No Gas Can	261	18.6

83.4% of gas can owners refuel their units once a month, while 7.9% of gas can owners refuel their gas cans twice a month (Table 17).

Table 17: On average how often do you refill this gas can? (Q170)

Gas Can Refuel (per month)	2012		2001	
	Count	Percent	Count	Percent
1	816	83.4	1,507	69.5
2	77	7.9	471	21.7
3	27	2.8	111	5.1
4	16	1.6	60	2.8
5	8	0.8	15	0.7
6-8	33	3.4	65	3.0
9 and above	1	0.1	17	0.8

Most lawn and garden equipment owners are content with what they currently have and only 6.6% of the owners plan to buy new lawn and garden equipment in the coming year (Table 18).

Table 18: Are planning to buy additional powered lawn and garden equipment in the next 12 months? (Q180)

Are you considering to purchase any L&G equipment within a year?	Count	Percent
Yes	197	6.6
No	2,774	92.5
Don't know	25	0.8
Refused	3	0.1

For those who are considering a lawn and garden equipment purchase within the next 12 months, the top three choices are walk behind lawn mowers, string trimmers, and leaf blowers (Table 19).

Table 19: What type of equipment do you plan to purchase? (Q190 and Q200)

Equipment Type	Gas	Electric	Don't Know	Refused	Total	Percent
Brushcutter/Hedgecutter	3	7	1	0	11	4.9
Chain Saw	9	2	1	0	12	5.3
Lawn & Garden Tractor	1	0	0	0	1	0.4
Lawn Edger	0	7	1	0	8	3.6
Leaf Blower	9	7	1	0	17	7.6
Riding Lawn Mower	1	0	0	0	1	0.4
Shredder/Chipper	1	1	0	0	2	0.9
String Trimmers	12	7	1	0	20	8.9
Tiller	6	0	1	0	7	3.1
Unspecified	0	0	58	0	58	25.8
Walk Behind Lawn Mower	40	8	3	0	51	22.7
Wood Splitter	1	1	0	0	2	0.9
Don't know	0	0	15	0	15	6.7
Refused	0	0	3	0	3	1.3
Not Listed	4	3	6	4	17	7.6

Table 20 shows respondents answers as to who makes decisions regarding lawn and garden equipment and services in the household.

Table 20: What gender is responsible for making lawn and garden decisions in the household?

Who makes lawn and garden decision making in household?	Count	Percent
Male	1,889	63.0
Female	924	30.8
Refused	186	6.2

52% of the households in the survey consisted of two occupants; 16.5% of surveyed households had a single occupant (Table 21).

Table 21: How many people live under your household?

Household Occupants	Count	Percent
1	496	16.5
2	1,569	52.3
3	456	15.2
4	234	7.8
5	53	1.8
6	13	0.4
7	8	0.3
8	2	0.1
9 - 23	6	0.2
Don't know	52	1.7
Refused	110	3.7

About a third of the respondents fell into the 45-64 age group and about one quarter of the respondents fell into the 25-44 age group (Table 22).

Table 22: What age bracket do you fall under?

Age Breakdown	Count	Percent
Under 18	13	0.4
18-24	113	3.8
25-44	698	23.3
45-64	1,098	36.6
65+	571	19.0
Don't know	266	8.9
Refused	240	8.0

The survey covered a wide range of income levels (Table 23).

Table 23: What is your income level?

Income Level	Count	Percent
Less than \$10,000	79	4.2
\$10,000 to \$14,999	91	4.8
\$15,000 to \$24,999	162	8.6
\$25,000 to \$34,999	164	8.7
\$35,000 to \$49,999	220	11.6
\$50,000 to \$74,999	288	15.2
\$75,000 to \$99,999	226	12.0
\$100,000 to \$149,999	257	13.6
\$150,000 to \$199,999	74	3.9
\$200,000 or more	98	5.2
Don't know	231	12.2

Section 5: Residential Lawn and Garden Survey Questionnaire

Air Resources Board Lawn & Garden Equipment Residential Survey 2011-2012

[Note: Answer choices which appear in (parenthesis) will not be read aloud to the respondent.]

Greeting, Introduction, and Qualification Section

Q10. Hello my name is _____ and I am a student calling from California State University, Sacramento. We are not trying to sell you anything. You were selected at random to participate in a quick, 10-minute statewide study on lawn and garden equipment, with questions like, "how often do you mow your lawn?" All your answers are confidential and you may refuse to answer any question at any time. Are you the person most familiar with the lawn and garden equipment at this address?

Yes, person agrees to be interviewed.

No, but someone new comes to phone (Skip to Q20)

No, that person is not home. (Schedule callback)

No, we don't do yardwork/don't have a yard (Skip to Q30)

(Don't Know)

(Refusal)

Q20. Hi, this is _____ and I am a student calling from California State University, Sacramento. We are not trying to sell you anything. You were selected at random to participate in a quick, 10-minute statewide study on lawn and garden equipment, with questions like, "how often do you mow your lawn?" All answers are confidential and you may refuse to answer any question at any time.

Yes, person agrees to be interviewed.

(Refusal)

Q30. Okay, I understand you don't do the yard work or don't have a yard but can I ask you just a few more short questions in order to complete our study? Your information is also very valuable.

Yes

No

(Don't Know)

(Refused)

If the respondent's answer is '2' they will skip to Not Qualified.

Q40. This survey is intended to collect information about household use of lawn and garden equipment not commercial use. Just to clarify, do you operate a lawn service?

Yes

No

(Don't Know)

(Refused)

If the respondent's answer is '1' '3' '4' they will skip to Not Qualified.

Q50. In which zip code do you live?

Q60. Which of the following best describes the property at which you currently live?

1. House

2. Apartment

3. Condominium

4. Townhouse

5. Other _____

6. (Don't Know)

7. (Refused)

Q70. Who usually maintains these lawn, shrub, tree, or garden areas (mowing the lawn, blowing leaves, etc.)?

1. *I or others living in the household do all of the yard work*
2. *I or others in the household do some of the yard work and a lawn service does the rest*
3. *A lawn service does all of the yardwork*
4. *(Don't Know)*
5. *(Refused)*

Q80. Do you own and/or use any powered lawn or garden equipment at your residence?

1. *Yes, I own and use equipment*
2. *Yes, I own but have not used equipment in over a year*
3. *No*
4. *(Don't Know)*
5. *(Refused)*

If the respondent answers '3' to Q70 and '3', '4', or '5' to Q80 they will skip to the Lawn Service section.

Equipment & Usage Section

Transition 1: Next I am going to ask you about the types of equipment you own and how often you use them.

[Note: Question 90 will be asked for each of the 14 types of equipment. Questions 100-130 will be asked for each piece of equipment owned. Images of each type of equipment will be at each interviewer station to assist the respondent if there is confusion about what each type of equipment is.]

Walk-behind Lawn Mowers

String Trimmers

Chain Saws

Leaf Blowers

Lawn Edgers

Brushcutter/Hedgecutters

Riding Lawn Mowers

Tillers

Lawn & Garden Tractors

Wood Splitters

Shredders

Snow Blowers

Stump Grinders/Chippers

Others _____

Q90. How many _____ do you own?

Q100. Let's discuss those _____ individually. Is the first [second/third/so on] _____...

Electric powered. Electric includes both battery-powered and plug-in.

Gas powered

Diesel powered

Other

(Don't Know)

(Refused)

Q110. How long do you use this piece of equipment each time?

15 minutes or less

Between 15 and 30 minutes

Between 30 and 45 minutes

Between 45 and 60 minutes

Other _____

(I Do Not Use This Equipment)

(Don't Know)

(Refused)

Q120. How often do you use this piece of equipment in ...

Spring, which is March, April, and May

_____ *times/month*

Summer, which is June, July, and August

_____ *times/month*

Fall, which is September, October, and November

_____ *times/month*

Winter, which is December, January, February

_____ *times/month*

Q130. What is the approximate age of this equipment?

_____ *years*

Portable Fuel Container Section

Transition 2: Now I would like to ask you a few questions about gas cans used to refuel your lawn and garden equipment.

Q140. How many gas cans do you own and use to refuel your lawn and garden equipment?

_____ *gas cans*

If the respondent answers '0' they will skip to the Equipment Purchases section. Note if answer is more than 1 Q150- Q170 will loop for each gas can.

Q150. About what size is this gas can? _____ gallons

Q160. What type of material is this gas can made of?

1. Metal

2. Plastic

3. Other

4. (Don't Know)

5. (Refused)

Q170. On average how often do you refill this gas can?

_____ *times per year*

Equipment Purchases Section

Transition 3: My next few questions are about powered lawn and garden equipment purchases you may be planning to make in the near future.

Q180. Do you plan on buying any additional powered lawn and garden equipment in the next 12 months?

Yes

No

(Don't Know)

(Refused)

If the respondent answers '2', '3', or '4' they will skip to the Lawn Service Section.

Q190. What type of equipment do you plan to purchase?

Q200. Do you plan to buy gas or electric?

Gas

Electric/Battery/Plug-in

Other

(Don't Know)

(Refused)

Q205. Why do you plan to buy electric/gas-powered equipment over electric/gas-powered equipment?

_____reason (open-ended)

Q210. Are you planning to buy any other pieces of powered lawn and garden equipment?

Yes

No

(Don't Know)

(Refused)

If the respondent answers '1' reask Q190-Q200.

Lawn Service Section

Q210. How often does the lawn service come?

_____ *times per month*

Q220. About how long does it take them to complete services each time?

_____ *minutes* _____ *hours*

Q230. We may do a future survey of providers of lawn and garden services. In order for us to contact them in a future survey like this one, would you please give us the name and phone number of the person or company that provides your lawn and garden service?

_____ *name* _____ *phone number*

Demographic Section

Q. How many adults live in your household?

Q. What is the age of the person who does the lawn and garden care in your household?

Q. I'm going to read a list of income ranges. Please tell me to stop when I reach the level of income for your household last year. (Interviewer: confirm the correct range by reading it back to the respondent, for example, "So, it was between \$25,000 and \$34,999?")

less than \$10,000

\$10,000 to \$14,999

\$15,000 to \$24,999

\$25,000 to \$34,999

\$35,000 to \$49,999

\$50,000 to \$74,999

\$75,000 to \$99,999

\$100,000 to \$149,999

\$150,000 to \$199,999

\$200,000 or more

Refused

Not Qualified Section

I'm sorry for bothering you today, thank you for your time, goodbye.

Completion Section

Thank you, those are all the questions I have for you today. Thank you for participating in our survey. Goodbye.